
DISTANCE LEARNING: ITS PECULIARITIES IN HIGHER EDUCATION DURING WORLD PANDEMIC COVID-19



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Abstract. *The work is devoted to the study of the issue of distance learning as a form of organization of the educational process in higher education. It is noted that distance learning has become one of the answers to the challenges of global reality of pandemic COVID-19. It is shown that distance learning was not a completely new form of organization of the educational process in higher education. Five generations of distance learning in historical retrospect and its characteristics and unique traits are presented. It is highlighted that the current stage of distance learning development can be considered as the next sixth generation, which is directly related to the global reality of pandemic COVID-19. The most important features of distance learning at this stage, namely its massiveness, lack of alternatives, and the improvement of distance education platforms are also presented. Besides an analysis of the experience adopted at different countries concerning the distance learning in the higher education institutions during the world pandemic COVID-19 is done.*

Keywords: *distance learning; generations of distance learning; higher education; pandemic COVID-19; sixth generation distance education.*

INTRODUCTION

One of the wildly discussed topics within the education community is providing the massive distance learning as an answer to the global reality of pandemic COVID-19 that took place all over the world in the last three years. The process of implementation of a distance form of learning has set large number of tasks that had to be solved in the shortest terms. It is obvious that distance learning was not a completely new form of organization of the educational

process. The transition to this form of education during lockdown was the implementation of already existing developments, and its massiveness and lack of alternatives are new.

LITERATURE REVIEW

Distance learning as a new form of organization of the educational process in higher education is the subject of a number of researches. According to the definitions of the well-known researcher of this issue Soren Nipper, who made a connection between the historical evolution of production, distribution, and communication technologies and the growth and features of generations of distance learning, there were three generations of distance learning (Nipper, 1989).

James C. Taylor in his research, that is “Distance Education Technologies: The Fourth Generation” (Taylor, 1995) and “Fifth Generation Distance Education” (Taylor, 2001) identified five generations of distance learning and concentrated on the new developments in the area of distance learning, such as e-Universities and Intelligent Flexible Learning Models.

G. Mark and B. Semaan, in their work “Resilience in Collaboration: Technology as a Resource for New Patterns of Action” (Mark, Semaan, 2008) has analysed the connection between different crises and implementing the information technologies in all areas that need support during that time. Study of M. El Mahdi and O. Romanovska (El Mahdi M., Romanovska, 2020) help us understand the nature of the phenomenon of distance learning during pandemic. The organisation of education in COVID-19 pandemic in Ukraine is analysed by O. Lokshyna and O. Topuzov (Lokshyna & Topuzov, 2021).

METHODOLOGY

In the article we systematize the relevant literature on the issue of distance learning in higher education. The obtained data are supplemented by the results of scientific interviews with university teachers and students and a survey of students of Ivan Franko National University of Lviv on the processes of distance learning in higher education, carried out to obtain first-hand information from different actors working within the university system. The obtained data are also supplemented by the information that was gained during international online guest lectures by European expert and consultant in the field of higher education (Mikeska, 2022) and associate professor of the University of Turku, Finland (Laiho, 2021).

The purposes of this work are: (i) a detailed analysis of the formation of distance learning and its five generations in historical retrospect; (ii) discussion of the issue of distance learning in higher education in the period of the pandemic as the next, sixth generation of the development of this form of education and its peculiarities; (iii) an analysis of the experience of different countries to summarize data concerning the peculiarities of distance learning in the higher education institutions during the world pandemic COVID-19.

MAIN RESULTS

Researchers claim that the first attempts at implementation of distance education are dated back 2000 years ago to the time “when the apostle Paul sent his “students” teachings in the form of his various letters to the new Christian churches in Asia Minor and the Mediterranean” (Pityana, 2007). Of course, we should clearly understand that this idea is widespread among religious people. One of the references to distance learning is associated with Voltaire and his correspondence on subjects of study, where Voltaire took the role of a teacher (Malyarchuk, 2008). Following attempt of using of distance form of studying had happened in the XVIII century

when Caleb Phillips published an advertisement in the Boston Gazette which said, “Seeking students for lessons to be sent weekly”; the method was named “Short Hand” (Pityana, 2007). Each of the mentioned examples had an individual character, which significantly distinguishes them from the massive implementation by distance education in the following years.

The first researcher who made a systematic attempt at periodization and singled out separate *stages of the development of distance learning* in historical retrospect was S. Nipper. All aspects of his research he laid out in his work “Third generation distance learning and computer conferencing” (Nipper, 1989), where he described the features and time limits of each stage.

The first generation of distance learning was named as *correspondence education* or “*single media*”. This stage was closely associated with the invention of printing, the release of the first postage stamp, and English teacher Isaac Pitman, who created the most well-known shorthand technique. In 1840, Isaac Pitman organised studying process by sending his notes by mail. This process looked the following way “He sent these to students, who were invited to transcribe into shorthand short passages of the Bible and send the transcription to him for correction” (Holmberg, 1995). After Isaac Pitman, there were Charles Toussaint and Gustav Langenscheidt, who used correspondence education to teach languages in Germany and founded a university based on this type of study (Demiray, Isman, 2014). Over time, more and more institutions of higher education were opened all around the world, which worked according to the principle of correspondence education: the University of St. Andrews (Scotland), Queen’s University at Kingston (Canada), the University of Illinois (the USA) and the University of London (United Kingdom). During 1900s-1960s, 82 universities were opened which worked according to non-traditional educational programs and provided correspondence education (Samoilenko, 2011). Desmond Keegan outlined *main features of distance learning during the first generation, namely* separation of teacher and learner; learners as individuals rather than grouped; two-way exchange of communication (McIsaac, Gunawardena, 2004). It is crucial to understand that in comparison to nowadays, distance learning “correspondence education” in its essence was more similar to modern extramural than to distance education as such.

The second generation of distance learning is directly related to the establishment of the Open University (OU) in the United Kingdom (1969). This stage was named “*multimedia distance education*”. Scientists of that time were interested in the use of new technologies that were in the process of active development at that time. It was the developments of research groups and professors of the Open University that became the basis for the development of distance education and contributed to the creation of similar higher education institutions in other countries. Thankfully to OU the *usage of mass media* was wise spread between universities. Media such as VCRs, CD-ROMs, DVDs, computer training programs, websites and so on became popular (Nipper, 1989). The model of distance education that was shown by Open University gave other institutions understanding that this area is perspective and competitive. Countries that followed OU’s example were France, China, the Netherlands, Japan, and other countries. At the moment, there are more than 1000 active “players” all around the world in the field of distance education.

One of the most important years in the history of distance education took place in 1982, when the term “correspondence” was officially changed to “distance”. The International Council for Correspondence Education was renamed into The International Council for Open and Distance Education. The adoption of the new name changed the understanding of the features and the essence of this form of education, but the main paradox remained. Doug Shale in his work “Toward a Reconceptualization of Distance Education” noted that one thing about distance education is that “it has asserted its existence, but it cannot define itself” (Shale, 1988). Accordingly, the understanding of distance education comes only when we directly encounter it.

The third generation of distance learning, “tele-education” was the last one in the Nipper’s

work. This stage is analysed as the one that used *asynchronous computer conferences* and its usage as the tool of increasing coverage. Contrary to the previous two stages, on which they were able to reach consensus, the third one raised a lot of contradictions. For example, in perspective of J. Taylor, who is also one of the well-known researchers in distance learning, third generation was more focused on *synchronous teleconferencing capabilities*.

The fourth generation of distance learning, according to J. Taylor (Taylor, 1995), is noted for being the one when active engagement had a significant role. *Usage of computers and other lower order technologies that provided mediated communication* were the main means of distance learning organization.

To characterize the *fifth generation*, we should back to J. Taylor and his work called “Fifth Generation Distance Education” (Taylor, 2001) and his ideas about the last stage that was described by him. First, it needs to be emphasized that the model of this generation is based on the previous one, the fourth generation, but uses the most modern assets of information and communication technologies, all the advantages of computers and, of course, the Internet. Main points of this stage of distance learning are *direct communication of the participants, easy access to the necessary information and the emergence of new educational service providers*.

One of the biggest impacts in the field of distance education has those *new providers* such as *virtual universities* and *online platforms*, which in other words could be called Massive Open Online Courses (MOOC). Virtual universities are higher education institutions that provide education by using information and communications technology (ICT) and a distance or hybrid form of education. The best examples of virtual universities are Florida Virtual School (FLVS) and University of Phoenix in the USA. Each one of them admits more than 100,000 students every year. This type of organizing the education process attracts and engages students. For example, according to the results of our *survey among students*, conducted in December 2021 concerning distance learning as a form of organization of the educational process in higher education in which 110 students of Ivan Franko National University of Lviv had been involved, 34% of students (Fig. 1) would definitely choose a virtual university to get a higher degree.

Would you select "virtual" universities as an institution to get a higher degree?

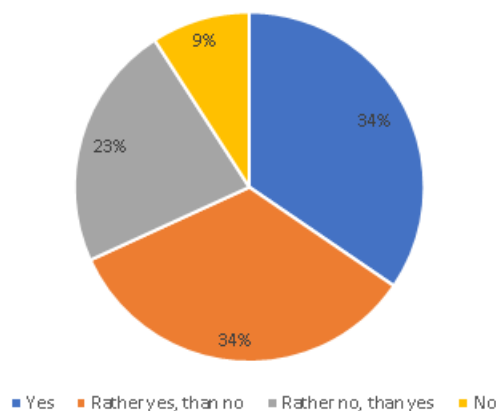


Fig. 1

Selecting a virtual university as an institution to get a higher degree

The next education providers are online platforms. There is a large number of web-sites that provide distance education. They differ according to the owner: created by universities

or independent companies. Some of platforms are free to use, but there are also courses that request payment. The biggest and most popular platforms are OpenLearn (provided by Open University), edX (managed by MIT and Harvard University, Coursera, Khan Academy, OpenupEd, Udacity and many others. According to the results of our survey among students mentioned above, more than 80% (Fig. 2) of students who utilized at least one of those platforms, are content with their choice of course or courses after completing them.

If you have utilized courses on distance learning platforms,
were you satisfied with the courses you took in this format?

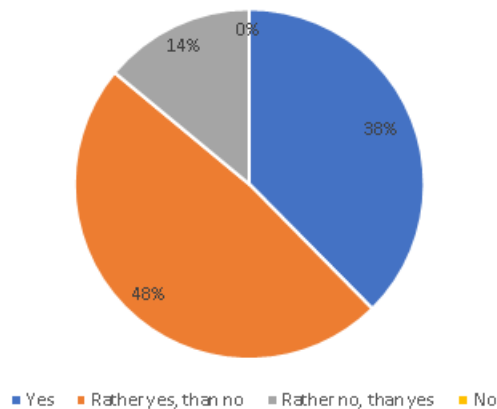


Fig. 2
The level of satisfaction with online courses among students who utilized at least one of the platforms

As we can see, the distance education is moving forward, and it changes. In the past two years, distance learning has taken its place all around the world due to the spread of the pandemic.

Nowadays, we can speak about new, *sixth generation distance learning* that is directly connected with global reality COVID-19. One of the most important features of this stage is its *massiveness* in comparison to previous ones and great improvement of platforms of distance education.

When we use the phrase “*massive distance learning*”, we mean that it reached 1,5 billion students in 191 countries as of 2000, according to the information provided by UNESCO (UNESCO, 2021). In works that are dedicated to the distance learning during world pandemic COVID-19 we can find such titles which characterize the specificity of the educational process of the given time, namely “forced or emergency distance learning” (El Mahdi, Romanovska, 2020), and “extreme distance learning” (Nepomnyashchyy, Marusheva, 2021), and help us to understand the spontaneous nature of this phenomenon. The global pandemic has turned distance learning from *one of the possible* forms of educational organization into an *urgent necessity* - at least for the previous two years and the nearest future. Gloria Mark and Bryan Semaan, in their work “Resilience in Collaboration: Technology as a Resource for New Patterns of Action” (Mark, Semaan, 2008) explained the connection between different crises (in our case, it is COVID-19) and information technologies and implementing them in all areas that need support during that time.

In support of all educational institutions in the world, UNESCO launched the Global Education Coalition (GEC), whose main purpose was to help to deal with this tipping point on all levels of the educational process. The most powerful and famous companies united to

gain the goal, 175 partners such as: BBC, UNICEF, Coursera, Zoom, Facebook, Moodle, EdX, Khan Academy, Blackboard and many others (UNESCO, 2021). The sphere of influence of this Coalition extends to 112 countries. The actions of GEC helped to make the process of adaptation to the new COVID-19 reality easier for educational institutions.

Of course, there were countries and universities that were prepared for those changes a little bit more than others, but according to the statistics, it is only 20% of the world that were equipped with technical means for distance learning (Irien, 2021). Regardless of the technical base, universities still experienced difficulties related to the speed with which the entire educational process had to be transferred to an online format of learning.

We analysed *the experience of different countries* to summarize data concerning the peculiarities of distance learning in the higher education institutions during the world pandemic COVID-19.

At the very beginning of the pandemic, universities in *Great Britain* decided to move to “mixed learning”, some lessons were conducted face-to-face, but all lectures were moved to an online format due to the large number of people that attended them. But in a short time, all educational processes were transferred to a distance format. Speaking of platforms and Learning Management Systems (LMS) that were used in universities of Great Britain, we can mention platform Canvas as the virtual educational system that was used by Oxford University. As the additional source of information, they used web-page of Bodleian Library. Interesting aspects of organizing distance learning in British universities were podcasts with lecture materials and reducing the length of lectures in the frame of new distance format. That change was proposed by the vice-rector of the University of Leeds (University of Leeds, 2022).

At the same time, *German* universities faced a problem that was connected with the prohibition of usage of cloud services, social platforms, microblogs or document sharing tools located outside the EU (Chursanova, Gareeva, Savchenko, 2021). This rule reduced the number of resources that could be used by such universities as RWTH Aachen University, University of Duisburg-Essen and others. Despite this, the university still managed to successfully implement distance learning.

Universities in *the USA* have also switched to a distance format due to the impact of the pandemic. For example, the Massachusetts Institute of Technology (MIT) is fully provided with its own technical base. As the main LMS MIT used Canvas, to conduct online-lessons Zoom and Google Meets were commonly used (Massachusetts Institute of Technology, 2022). The aspect of adaptation to the distance format of studying that we would like to mention are the 3-D models that were used during lessons to show some physics processes.

During the first terms of the pandemic, the experience and actions of *Canadian* universities were pretty similar to British universities. They decided to move to the online format only for lectures for groups with more than 250 students. But just as in Great Britain, in short time all universities moved to full distance learning. The willingness of Canadian organizations in the education sector to share their expertise with other colleges is a really welcome development. The Society for Teaching and Learning in Higher Education made the whole web-page called Keep Teaching with services for teaching, evaluating and studying to help institutions of higher education adapt to the new format. One of the biggest Canadian platforms with online courses, Riipen cancelled the subscription fee to make it accessible for all students. Studying information about the process of distance learning in universities, we find out about some authors’ LMS such as Quercus (University of Toronto), myCourses and Minerva as self-service administrative systems (McGill University). Learning Management Systems such as D2L, Moodle, Blackboard, Canvas, PowerSchool and Seesaw are widely used by Canadian universities. As a service for video conferences, the most popular are Zoom, MS Teams, Google Meets and Cisco Webex. There is one tendency that occurred in many universities in Canada,

which is to continue using distance learning or mixed learning even now, when the situation with COVID-19 has stabilized in the country and the epidemiological situation allows visiting lessons face-to-face (Thomas, 2021). As we can see, this “forced” distance learning has already made an impact on the education process in Canada. It means that people who are connected with education are satisfied with distance learning as form of organizing studying process.

Another country we would like to mention is *Italy*. This country became the first European country where was the first case of COVID-19. The process of transition to a distance learning format was carried out under the slogan “La Scuola non si ferma”, which means “School Never Stops”. To understand the process of organizing distance learning as an example we took the University of Bologna (UniBO) and analysed its experience. The distance format was implemented rapidly: it took only two weeks to move all courses, teaching activities and exams to the online format. Microsoft Office 365 was chosen as the main university system. To make this service and the programs that it offers easier to understand, tutorials on how to use them were placed on the official web-site of UniBO. Even though moving to distance learning was pretty smooth, there were also some difficulties. Antonino Rotolo, the Vice-Rector for research and professor of philosophy of law at the University of Bologna, pointed out the problem with written examinations and dissertation defences. He said “various technological solutions are available for written exams, but they are not optimal since proctoring and control are harder” (Rotolo, 2020). It gives us the understanding of the cons that are inherent in distance learning and must be resolved. As in other countries, in Italy there is also a university with its own LMS. It is Ca’ Foscari University of Venice that uses EasyPlanning. There are also two apps “EasyRoom” and “AppPosto” which were proposed by the Italian Ministry of Education.

According to Resolution of the Cabinet of Ministers № 211 of March 11, 2020 (Postanova Kabinetu Ministriv Ukrainy, 2020), all educational institutions in Ukraine were moved to distance learning. There were no guidelines for using some specific services, so universities decided by themselves what LMD and platforms they wanted to use. For example, National University Kyiv-Mohyla Academy moved their studying process to the DistEdu app with more than 800 courses. One of the most popular universities in Ukraine, Taras Shevchenko National University of Kyiv, chose Moodle and Google Classroom. It differs from the course and professor who conducts lessons. One more university that we would like to add to the list is Ivan Franko Lviv National University, which implemented the use of the Microsoft Office 365 package, which made it possible to use MS Teams, corporate mail and other applications of this platform and made the process of organizing the educational space convenient at all levels of the university’s work.

To obtain first-hand information from different actors working within the university system, in order to understand the peculiarities of distance learning, we organized *scientific interviews*, namely scientific interview with Associate Professor of the Department of Foreign Languages for Humanities of the Ivan Franko National University of Lviv O. Ivashyshyn (Ivashyshyn, 2022), who has experience in the field of distance education and has been actively researching this issue for 20 years, as well as with the head of the professional bureau of students of the Faculty of Pedagogical Education of the Ivan Franko National University in Lviv J. Tsekhmajstrenko (Tsekhmajstrenko, 2022). As mentioned, we also conducted a *survey among students* on distance learning as a form of organization of the educational process in higher education and as an answer to the global reality of pandemic COVID-19. We involved 110 respondents in it. The obtained data was also supplemented by the information that was gained during *international online guest lectures* by Bologna expert and higher education consultant S. Mikeska (Mikeska, 2022) and associate professor of the University of Turku, Finland A. Laiho (Laiho, 2021), who answered questions relevant to the topic of our research.

The first question of our survey was on “Did you know about the concept of “*distance*

education” before its mass implementation due to the pandemic?” As we can see in the diagram, most of the interviewed students were unfamiliar with this term (Fig. 3).

Did you know about the concept of “distance education” before its mass implementation due to the pandemic?

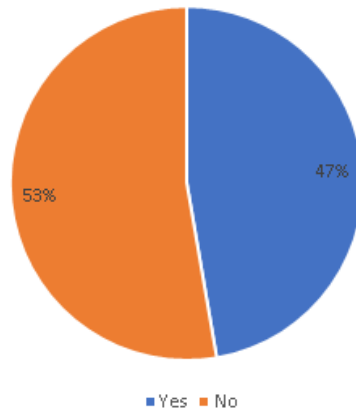


Fig. 3

The ratio of students who knew and did not know about “distance education” before the beginning of the mass implementation due to the pandemic

Additionally, we asked students of different faculties of the Ivan Franko National University of Lviv on how satisfied they are with the use of distance learning for their academic pursuits. It was encouraging to discover that 70% of respondents are generally satisfied with the distance learning (Fig. 4).

One of the key issues we sought to address was the *degree of satisfaction with distance learning during COVID-19*, specifically what *benefits and drawbacks* students and instructors saw for themselves. We would like to begin with the most popular *pros* that were mentioned by respondents: losing the sense of competition that allows you to learn at your own pleasure; distance learning helps to overcome psychological barriers and communication problems that arise in face-to-face communication; it is emotionally more comfortable to be at home than in university, according to words that were said by the head of the professional bureau of students, “You can even sit in different socks and pajama pants if you feel comfortable that way” (Tsekhmajstrenko, 2022). A common perception among students is that the distant learning model is more psychologically comfortable. In response to the survey’s question, “Which form of education do you consider more psychologically comfortable?”, 57% of respondents picked distance learning (Fig. 5).

One more positive aspect of distance learning was mentioned by European expert and consultant in the field of higher education, S. Mikeska, “You can reach a new target audience using the online format. I can say that many students in Germany will want to continue their studies remotely even after the end of COVID-19. Distance learning will remain one of the leading approaches to the organization of educational space” (Mikeska, 2022).

There are also *cons* of distance learning that were mentioned several times by respondents, such as: severe fatigue as the whole phenomenon that was discovered by researchers from Stanford University and called “Zoom fatigue” (Ramachandran, 2021); academic dishonesty is cited as “the principal hurdle that has a deleterious influence on the educational process and the objectivity of its evaluation” (Ivashyshyn, 2022); when you answer during online-class, it’s hard to tell if the teacher is happy with the answer or not. The later problem is caused by the fact

that there is no eye-contact between student and teacher. From the educator’s perspective, we have found that “When remote work takes place in fairly small groups, it allows you to use all the advantages of the online format to the maximum; however, when it comes to large groups of students, most opportunities become unavailable” (Laiho, 2021). Returning to the survey and statistics, we would like to emphasize the fact that 35% of students pointed out “distance learning” as an answer to the question “Which type of education do you prefer?” as opposed to a mixed or face-to-face form of learning (Fig. 6).

However, it is also crucial to understand that students are not yet prepared to fully transition to distance learning and select distance education as their primary mode of academic study. By examining and contrasting the percentage ratio on the figure, we were able to draw these findings (Fig. 7).

Are you satisfied with distance learning?

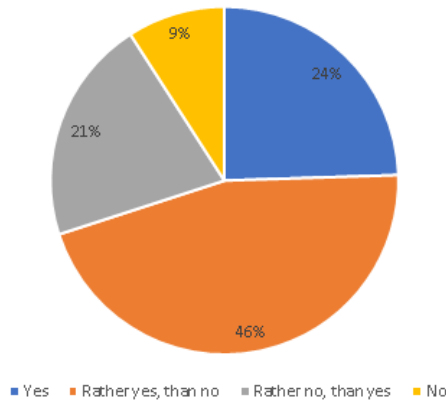


Fig. 4
The level of satisfaction with distance learning among students

Which form of education do you consider more psychologically comfortable?

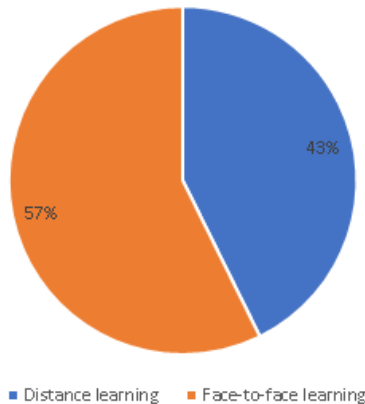


Fig. 5
Selecting a type of education that seems to be psychologically more comfortable: face-to-face or distance learning

Which type of education do you prefer?

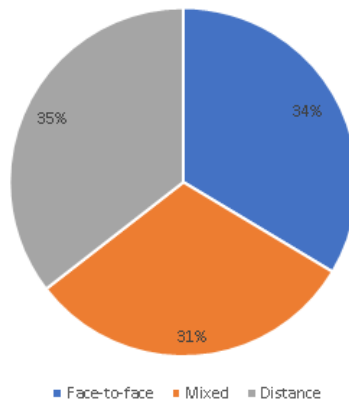


Fig. 6
The percentage ratio of the choice of the form of organization of the educational process

Would you select distance education as a primary method of pursuing higher education?

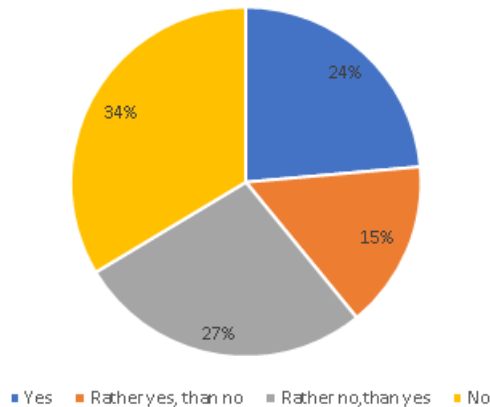


Fig. 7
The proportion of students who would and would not select distance education as their primary method of pursuing higher education

CONCLUSIONS

Nowadays distance learning as a form of organization of the educational process and as an answer to the global reality of pandemic COVID-19 plays crucial role in higher education dynamics. The distance education that we knew before the COVID-19 was different and had passed its five generations in historical retrospect. Distance learning in the last three years gained a higher point that had not been seen before and that gives us permission to talk about a new stage, namely sixth generation distance learning. It is directly related to the global reality of pandemic COVID-19. The most important features of distance learning at this stage are its massiveness, lack of alternatives, and the improvement of distance education platforms.

During the pandemic, we can observe how more and more new Learning Management Systems, Massive Open Online Courses and other services appears. We see how old platforms improved to become equal players on the education field, where the Internet and online-tools of different types have become vital to continue the educational process. As we can see from examples of different universities, they do not want to return to the education that they provided before the global pandemic. They say that they are going to stick to the services and forms of studying that they found out during this time. This massive COVID-19 distance learning not only changed the way distance education functions, but also left its mark on the traditional education system.

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